



Student Competencies in a Redeveloped Senior Cycle

Carol McGuinness

Queen's University Belfast

c.mcguinness@qub.ac.uk

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1 Purpose and structure of the report

The purpose of this report is to present a research-informed review and analysis of key issues for NCCA to consider in developing a student competencies framework for a redeveloped Senior Cycle. NCCA has consulted widely on general issues related to the Senior Cycle Review and the purpose, vision and guiding principles are published in the Senior Cycle Review: Advisory Report (NCCA, 2022). A particular focus emerged from that review on the importance of **integrated** development to “help every student to become more enriched, engaged and competent, as they further develop their knowledge, skills, values and dispositions in an integrated way.” (NCCA, 2022, p. 20) The current research and report is positioned within this general context.

The NCCA research brief for the report posed the following questions to be considered (though not necessarily in this order):

- What does the research literature identify as the main opportunities and challenges when the curriculum frames learning using a competencies framework? (Section 2)
- What overarching competencies are foregrounded in upper secondary education in 6 different jurisdictions, as comparators to Ireland? (Section 4)
- Continuity and progression: How can overarching competencies in senior cycle make meaningful tangible connections with NCCA’s curriculum frameworks for primary school and junior cycle and for their future learning? (Section 6)
- What might a research-informed classification for key competencies in senior cycle look like? (Section 3 and Section 5)
- Should different competencies be emphasised in different programmes, subjects and/or modules in senior cycle or can the same overarching competencies framework be used, irrespective of the combination of programmes/subjects/modules being followed? (Section 3 and throughout other sections)

With regard to research sources, the report draws primarily on research reviews and syntheses rather than quoting primary sources. Both psychological, curriculum studies and educational policy literature are referenced. For the jurisdiction comparative analyses, information was accessed through national/international curriculum websites (using Google translate when necessary) and related published literature.

An important starting point for this report was a previous similar piece of commissioned work which the author completed for NCCA on 21st century competencies in a redeveloped primary curriculum (McGuinness, 2018). Although the focus of that report was on the primary curriculum, the scope of the report was wider, for example, interrogating the language/vocabulary used around competencies

and how that should be framed, devising a classification system for key competencies, as well as completing comparative analyses across jurisdictions, with the focus on the primary stage. Conclusions from that report will be reviewed to check their relevance to the distinct Senior Cycle phase of education and in the light of research and developments that have occurred since the material for the 2018 report was assembled and reviewed. Because of the frequency with which that previous report is referenced in the current report it will be referred to simply as the *NCCA Primary Report 2018*.

It must be remembered that the Senior Cycle is not beginning from scratch on this general curriculum question. There already exists a Key Skills Framework for Senior Cycle (NCCA, 2009) with aims and goals very similar to those for any new Senior Cycle student competencies framework. An important question for this report will be the extent to which this framework can be refreshed in the light of more recent developments, continue to be familiar to teachers and schools, yet act as a powerful driver for the redeveloped Senior Cycle.

The structure of the report is as follows:

Section 2 outlines the meaning of broader goals for student learning and the potential benefits to be gained by framing a curriculum in this direction. It reports on initiatives that have clarified the meaning of key competencies and gives a first glimpse of new directions.

Section 3 is a restatement of the conclusions about the architecture of key competencies and their classification from the *NCCA Primary Report 2018* and acts as a point of reference against which new directions can be assessed.

Section 4 turns to comparisons - comparing developments in international frameworks and specific comparisons with 6 other jurisdictions, deemed to be relevant to the Irish context and the lessons to be learned from them. Conclusions are drawn and a four-way classification of key competency is proposed. This classification is a refinement of the version proposed in the *NCCA Primary Report 2018* and draws on more recent developments and nuanced conclusions from the comparative work.

Section 5 shifts to more specific recommendations for the Senior Cycle, drawing on the NCCA purpose, vision and guiding principles for the redeveloped Senior Cycle as well as a critique of the current Senior Cycle Key Skills Framework. Recommendations are made for ways in which the Key Skills Framework can be refreshed to meet the newer thinking associated with the architecture of key competencies.

Section 6 then examines the alignment between the recommendations for a Senior Cycle Key Competency Framework and related existing frameworks for earlier phases of education, Aistear for early years, the Key Competencies for Primary phase, and the Junior Cycle Key Skills. Continuities and

discontinuities are identified. More general comments are made on conceptions of students' progression in learning.

Section 7 includes final comments and reflections.

References

Appendices

2 Broader learning goals and key competencies

2.1 What are broader learning goals?

The desire for broader learning goals for education at all levels, including school education, has gained considerable momentum since the turn of the century. Although first characterised as “21st century skills”, since we are now almost one quarter way through the century, that name already seems dated, with more recent names being Future Learning, Future Skills, Deep Learning and so on. Whatever the term used, the focus of these broader learning goals is on learning beyond traditional school subject boundaries and even beyond literacy and numeracy which are usually considered as the gateways to curriculum learning. They are variously named as key skills, transversal skills, new literacies (especially digital or multimedia), key competencies or general capabilities and usually include the development of characteristics such as critical and creative thinking, collaborative/team working and the ability to manage one’s own learning. Whatever the differences between the terms, they point to a type of learning that stretches across-the-curriculum with the intention of enhancing student learning - both inside and outside school, in the here-and-now and in the future. So they are considered as powerful drivers for learning. But broader learning goals are not confined to the development of the personal learnings mentioned above; they now embrace a range of emerging cross-disciplinary and interdisciplinary domains such as education for citizenship, intercultural understanding, education for sustainability and so on, helping students straddle learning in diverse and complex contexts. In the following sections, we shall see how these learning goals are articulated in both international and national learning curriculum frameworks.

2.2 The need for broader learning goals and potential benefits

The need for broader learning goals has been expressed from several different perspectives within educational research and curriculum discussions. For example, (1) dissatisfactions are often expressed about the quality of students’ current learning - that it is not sufficiently robust to apply beyond the school context and in the wider world; (2) analyses of current and future 21st century challenges point to the need for re-appraising what students need to learn at school; and (3) the recognition of the importance of non-cognitive attributes of the person (essentially attributes other than intellectual ability) as predictors of school achievement and later life outcomes. These points will be elaborated upon briefly in the paragraphs below.

The level of students’ learning is often critiqued as not being sufficiently ‘deep’. The argument goes something like this. While students’ understanding may be sufficient to pass examinations, it is not

sufficiently robust to be applied beyond the school context in which it was acquired. Students' understanding, it is argued, is fragile and fragmented, consisting of isolated and overly specific concepts without sufficient generality. Students can learn to solve problems when they are presented in predictable ways but not when they are encountered in less predictable and messy real-world environments (e.g., Perkins, 2014). Resonating with this point is the conclusion drawn by Smith et al., (2019) from a consultation exercise on the current Senior Cycle reform. Feedback from teachers, parents and students point out that the need to 'cover the course' can result in a focus on rote learning and a reduced focus on higher order thinking and broader skills development. As well, recent research on the cognitive demand of exam questions in the Leaving Certificate (with the exception of English) continue to show a lack of cognitive challenge and a focus on memory recall and procedural learning (Burns et al., 2018).

Contemporary research writings on the nature of effective learning recognise that there is more to it than the rehearsal of 'to-be-remembered material' for subsequent reproduction or even good understanding. What constitutes effective or deep learning is multi-layered. Drawing on an extensive body of research, De Corte has identified key ingredients for what he calls adaptive competence – “the ability to apply meaningfully-learned knowledge and skills flexibly and creatively in new situations” (De Corte, 2010, p. 47) - what transfer of learning usually implies. Acquiring adaptive competence means learning much more than might be traditionally expected of **well-mastered subject knowledge and subject skills**. It also means that learners become well practised in using a repertoire of what are termed **heuristics or thinking plans and strategies**. While these might first be encountered and learned in specific contexts, they have the potential to be more generally applicable across contexts, hence their heuristic or transfer value. The other key ingredients identified by De Corte recognise the importance of newer forms of learning – **knowledge about how to learn, how to organize and manage oneself as a learner**, underpinned by **positive beliefs about oneself as a learner** and about the to-be-learned material. The dynamic integration of these ingredients creates adaptive competence, according to this view. In particular, the idea of adaptive competence foregrounds **the role of the learner as an agent in their own learning** (e.g., knows about learning; is self-regulatory; can build knowledge and use it flexibly) rather than as a passive recipient of pre-existing knowledge. This image of learning links directly with the kind of learning envisaged through the development of key competencies. So the potential benefits of embracing key competences for the quality of student learning are significant.

As well as the dissatisfactions expressed about the quality of students' current learning, analyses of 21st century challenges have led to a **re-appraisal of what students need to learn in school to support them in the lives they are currently experiencing, as well as to prepare them for more uncertain**

future lives. The OECD's report, *The Future of Education and Skills: Education 2030* (OECD, 2018), summarised the challenges under different headings – environmental (including climate change, depletion of natural resources and the challenge of sustainability); economic including innovation in science and technology, biodiversity, artificial intelligence, financial interdependencies leading to exposure to unanticipated risks and crises); social (including population growth, world famine, migration, urbanisation, cultural diversity, inequalities leading to conflicts, loss of confidence in traditional institutions). These **challenges are often characterised as 'wicked problems'**, not just because they are difficult to solve but because they may not have optimal solutions, due to the interdependences between causes and consequence, their span across multiple domains of knowledge, and their general level of complexity. They are not only difficult to solve, but even to conceptualise and thus considered less tractable through more traditional problem-solving approaches. Educating students to understand and deal with these challenges, it is argued, will require a considerable **shift to problem solving approaches of different kinds, greater reliance on creative and novel approaches, the ability to deal with complexity, tolerance of ambiguity, the ability to deal with contradictions, as well as resilience in the face of disappointment and frustrations.**

Responding to the social challenges from a human rights and social justice perspective will require young people to learn **how to participate and contribute to decision making** at local, national and international levels. Social justice theorists argue that young people not only have the right to political participation but they also need the 'capabilities' to exercise those rights (e.g., Nussbaum, 2000), and that education is central to their development.

From a more empirical educational viewpoint, recent research reviews have summarised the evidence base for the **impact of these broader types of learning on traditional indicators of school achievement and later life outcomes.** Where previous research focused on intellectual ability as the best predictor of school achievement, more recent reviews have analysed and synthesised the impact of other personal attributes and characteristics. For example, Rosen et al (2010) synthesised what is currently known about the predictive power of "non-cognitive skills" (essentially personal attributes other than intelligence), and identified intrinsic motivation and self-efficacy (beliefs about the self) as predicting performance on school grades and tests. In a longitudinal study following 15-year-olds into adult life, Dauber (2007) reported the importance of motivation and self-regulation on both school achievement and later success in life. Drawing conclusions from a review of reviews on the impact of personality and other non-cognitive factors on school achievement, Pellegrino & Hilton (2012) pointed to substantial evidence for the positive impact of conscientiousness (staying organised, being responsible, exerting effort and being hardworking), and the negative impact of anti-social behaviour on school achievements and job outcomes. As well, many of these factors have indirect effects on

school outcomes through their influence on school attendance, study habits, and general participation in school activities.

The above patterns prompted the OECD's first survey of social and emotional skills, *Beyond Academic Learning* (OECD, 2021), and their relationship between school achievement and students' psychological well-being. Two age groups were surveyed, 10-year-olds and 15 year olds, in 10 cities and 9 countries. The survey reported an intriguing and complex pattern of results. For example, there was a dip in reported social and emotional skills as the students enter adolescence, with 15-year-olds reporting lower skills than 10-year-olds. Specifically, there were dips in students' level of creativity and curiosity, and this was confirmed by parents' and teachers' views as well. The pattern for the relationship between school grades and social and emotional skills was mixed, with some skills, persistence and curiosity, positively related to school outcomes and others, such as stress resistance, creativity and sociability, negatively related. While these patterns need careful interpretation in the context of different school environments and systems, there is no doubt that they confirm that social and emotional skills do matter for students' learning and their wellbeing at school. Wellbeing is increasingly recognised as an important broader learning goal for education – both individual and collective wellbeing (see its central position in the OECD's (2018) Learning Compass, and various OECD working papers and literature reviews on emotional wellbeing in children and adolescents (Choi, 2018) and physical health and wellbeing (Ashton, 2018)).

Reflecting these trends, **national curriculum authorities** in many countries have already begun to include them in curriculum reviews and implementation plans, as well as in professional development and teacher training. There is also extensive **involvement with these issues at international level**. Comparisons of developments in other jurisdictions and international frameworks will be reported in Section 4 of this report.

2.3. Key competencies: Clarification of meaning and new directions

The shift in terminology from skills to key competencies has been particularly noticeable in European discussions, influenced by the European Commission's Key Competences for Lifelong Learning (note competences, not competencies), which has been recently revised and elaborated from an earlier 2006 version (European Commission, 2019), the OECD's DeSeCo (Definition and Selection of Competencies) project (Rychen & Salganik, 2003; DeSeCo Executive Summary, 2005), and more recently by the OECD's Learning Compass Framework which is central to their work on The Future of Education and Skills: Education 2030 (OECD, 2018). The European focus on key competences is further

illustrated by the very recent survey of key competences in school education in Europe and related policy guidelines (Looney et al, 2022, for the European Commission).

In comparison to the use of skills terminology, the shift to competency explicitly recognises the **role and importance of knowledge** in developing these broader types of learning. Skills-based curricula (so-called) have been previously critiqued for under-representing and potentially undervaluing knowledge (e.g., Priestley & Minty, 2013). In addition, the competence approach broadens the concept to include **not just skills** (the capacity to do something with a degree of proficiency) but also **a broader range of personal attributes such as attitudes, mind-sets, dispositions and values**, acknowledging that it is not sufficient to be able to act skilfully, the person must be motivated to do so consistently and be alert to the contexts in which it is appropriate to do so as outlined in the *NCCA Primary Report 2018* (pp 9-10).

The OECD's DeSeCo position paper is perhaps the most advanced theoretical position and has been influential across a range of different curriculum developments, both nationally and internationally. The focus for that project was on preparing young people for a successful life in a well-functioning society. With regard to education, the focus was on enabling young people to *act* – make decisions, problem solve – as well as to learn well. According to this view, a competency includes – prior knowledge relating to the context, cognitive skills, practical skills, social skills, emotions, attitudes, values – co-ordinated to enable the person to act in relation to a specific demand.

“ - a competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilising psychosocial resources (including skills and attitudes) in a particular context. For example, the ability to communicate effectively is a competency that may draw on an individual's knowledge of language, practical IT skills and attitudes towards those with whom he or she is communicating” (OECD DeSeco, Executive Summary, 2005 , p. 4).

Within this definition, the emphasis is more on what to do with the knowledge rather than the acquisition of the knowledge itself. The DeSeCo framework has been very influential particularly for New Zealand's curriculum approach to key competences (Hipkins et al., 2014).

In the European Commission's revision of their Key Competences for Lifelong Learning framework, **key competences are explicitly defined in terms of knowledge, skills and attitudes**. Each of the eight competences (literary, multilingual, mathematical/scientific, digital, personal/social/learning to learn, citizenship, entrepreneurship, cultural expression and awareness) is described under each heading. For example, Table 1 describes what is considered as essential knowledge, skills and attitudes for the key competency of personal/social/learning to learn. Note the emphasis in this example is on lifelong learning and not just on school learning.

**Table 1 Example Key Competence: Personal, Social and Learning to Learn
(from Key Competences for Lifelong Learning, European Commission, 2019)**

<p style="text-align: center;">Knowledge</p> <p style="text-align: center;">Knowledge is composed of the concepts, facts and figures, ideas and theories which are already established, and support understanding of a certain area or subject</p>	<p style="text-align: center;">Skills</p> <p style="text-align: center;">Skills are defined as the ability to carry out processes and use the existing knowledge to achieve results</p>	<p style="text-align: center;">Attitudes</p> <p style="text-align: center;">Attitudes describe the disposition and mind-set to act or react to <i>ideas and situations</i></p>
<p>For successful interpersonal relations and social participation, it is essential to understand the codes of conduct and rules of communication generally accepted in different societies and environments. Personal, social, and learning to learn competence requires knowledge of health, mind, body and lifestyle. It involves knowing one's preferred learning strategies, knowing one's competence development needs and various ways to develop competences and search for the education, training and career opportunities and guidance or support available.</p>	<p>Skills include the ability to identify one's capacities, focus, deal with complexity, critically reflect and make decisions. This includes the ability to learn and work collaboratively and autonomously and to organise and persevere with one's learning, evaluate and share it, seek support when appropriate and effectively manage one's career and social interactions. Individuals should be resilient and able to cope with uncertainty and stress. They should be able to communicate constructively in different environments, collaborate in teams and negotiate. This includes showing tolerance, expressing and understanding different viewpoints, as well as the ability to create confidence and feel empathy.</p>	<p>The competence is based on a positive attitude towards one's personal, social and physical wellbeing and learning throughout one's life. It is based on an attitude of collaboration, assertiveness and integrity. This includes respecting diversity of others and their needs and being prepared both to overcome prejudices and to compromise. Individuals should be able to identify and set goals, motivate themselves, and develop resilience and confidence to pursue and succeed at learning throughout their lives. A problem-solving attitude supports both the learning process and the individual's ability to handle obstacles and change. It includes the desire to apply prior learning and life experiences and the curiosity to look for opportunities to learn and develop in a variety of life contexts.</p>

The most recent OECD initiative around competency has embraced the idea as part of a wider learning approach called the Learning Compass 2030 (OECD, 2019). The authors are keen to emphasise that this is neither a curriculum nor an assessment framework but a more general approach to learning that could guide curriculum development in a particular context. It is worth mentioning that the compass has been co-constructed by an international group of teachers, students, academic researchers, and curriculum policy experts.

The metaphor of the compass is adopted to illustrate -

“the need for students to learn to navigate for themselves through unfamiliar contexts and find their direction in a meaningful and responsible way instead of simply receiving fixed instruction or direction from the teacher” (Learning Compass 2030, Concept Note, OECD 2019).

A key concept in the compass is the idea of **student agency and co-agency**. The notion of agency implies more than is usually understood, for example, by independent learning, self-directed learning or even student voice. It implies that students need to be able to influence and shape not just their learning but their own lives and the people and situations around them. The idea of co-agency highlights the social contexts in which students learn and work, so co-agency involves interdependent agency - between students and their teachers, between students and their peers, as well as their families and communities. Thus, there is a shift in the meaning of student agency beyond personal agency to social/collective agency, captured also in citizenship education or global competence.

To enable students to act in this agentic way, the Learning Compass introduces what might be called ‘second order’ competences, labelled as transformative competences. These cut across other types of broader learnings and build on core cognitive foundations (including literacies), health foundations (including mental health and wellbeing), and social and emotional foundations (including self-regulation and a moral compass). These transformative competences will be described in greater detail in the next section when they are compared with other international competency frameworks. Suffice to say that already the purpose and scope of key competencies is developing and moving in new directions.

2.4 The curriculum design challenge

Despite these newer conceptual approaches, the curriculum design challenge for any key competency approach remains; where best to position such a framework within the overall curriculum design and guidance documents for schools, particularly in relation to subject teaching?

Various models have been previously critiqued by Reid (2006), drawing on his experience of earlier skills-based curriculum reforms in Australia and elsewhere, but the lessons remain the same. He points out that the failure of previous reforms to have a serious impact on the curriculum and student learning was because the approach adopted was not a sufficient departure from what had gone before - essentially a subject-based curriculum. He is particularly sceptical of what he calls the ‘name and hope’ model, that is, naming the desired competencies and exhorting teachers to pick them up in their subject teaching. Without any further advice on how they might be linked to their subject teaching, they remain just broad aspirations. Even an ‘embedded’ approach, where the key competencies are

integrated within the subjects or learning areas with guidance on where they might be best developed within that subject, can be limited because the competency becomes marginalised or invisible in the face of subject teaching imperatives. Additionally, the competencies become fragmented across subjects, their overarching intention gets lost, and students fail to make connections between their experiences of practising the competency across different subjects and classroom experiences.

As well as the specific design challenges with regard to the where to position a key competency framework within overall curriculum design, other issues will emerge related to the alignment of the reformed curriculum with assessment expectations and processes, especially in relation to high-stakes examinations. There will also be issues of professional development for teachers and school as they embrace more fully the implications of key competencies for their classrooms and for their students. Finally, monitoring the roll-out of the reformed curriculum, both in the short and longer term, will be needed to provide NCCA with vital feedback to help fine-tune, modify and adapt the curriculum to changing circumstances. Consideration of these issues may be premature at this stage but will need to be addressed in the longer run.

3 A research-informed approach to key competencies for the senior cycle

3.1 Preliminary comments

In the *NCCA Primary Report 2018* the author proposed a research classification for key competencies. From the comparative analyses and research across international frameworks completed at the time of that report, a distinct classification for the primary phase did not emerge. Rather, competency frameworks were pitched at a level applicable to school learning across phases and indeed to lifelong learning more generally. Phases of education (e.g., stages in primary and secondary education) were dealt with through statements of expectation for students' learning at each phase, articulated in progress maps, learning continua or profiles. A similar picture emerged when comparisons were made between specific jurisdictions.

For this report I have revisited the key competency classification previously reported, with the intention of updating the framework with a particular focus on the upper secondary phase of education. Although additional conceptual work has been completed in the last few years (outlined in Section 2 of this report), nothing specific emerged with regard to the final phase of secondary education or senior cycle. NCCA's position with regard to asking for a distinct, and perhaps more tailored, classification of key competencies/key skills for different phases of school learning stands out as different in that regard.

Consequently, this section will rehearse the key components of the overarching competency framework reported in the *NCCA Primary Report 2018*, and restate the arguments for their inclusion, especially ideas behind the meaning of a competency being 'key'. The subsequent sections will report new and more recent comparative work to check the shelf-life of the 2018 recommendations and to interrogate specifically their relevance to the Senior Cycle.

In final recommendations for the Senior Cycle, I will pay particular attention to the guiding principles for a redeveloped senior cycle as outlined in the Senior Cycle Review Advisory Report (NCCA, 2022), specifically the principles calling for **challenge, engagement and creativity; learning to learn, learning for life; and participation and citizenship.**

3.2 A research-informed key competency framework

The current approach embraces the conceptualisation of competency to include knowledge, skills, and values/dispositions. The recent OECD Learning Compass 2030 project made a significant contribution

to clarifying the meaning of these terms through a series of concept notes.¹ I note that these concept notes have also been used in the Senior Cycle Review: Advisory Report. In the *NCCA Primary Report 2018* I made a similar attempt to clarify the meaning of terms, particularly skills, values and dispositions. Here is a brief summary which draws on both of the above sources:

Knowledge: refers not just to bodies of established disciplinary knowledge (facts and figures, concepts, theories) but also to interdisciplinary knowledge, epistemic knowledge or ways of knowing and associated truth claims, and knowing *about* how to do something (not quite the same as being skillful, see below).

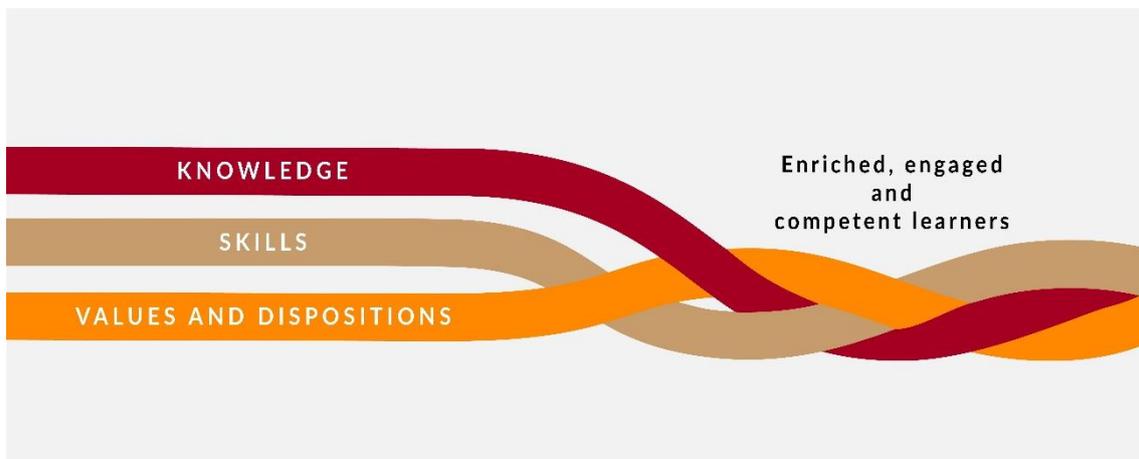
Skills: being skilful at something refers to the ability to carry out some process with a degree of proficiency, indicating that there is a developmental aspect to skills. Skills can be developed in different areas – cognitive/metacognitive, social/communication, and physical/psychomotor. It also can apply to the ability to apply knowledge to achieve goals.

Values/dispositions: Values refer to underlying beliefs that people hold about what is desirable, for themselves and for society more generally. Dispositions refer to the tendency for a person to act in a certain way in given circumstances, indicating that as well as being able to act skilfully a person must be motivated to do habitually and know in what circumstances it would be appropriate to do so. Values and dispositions are linked, as people are often disposed to act because of their underlying values and beliefs. Other terms are often used to capture this aspect of a competency, such as attitudes or mind-sets.

These different aspects of a competency work together in an integrated way, as exemplified in the figure below, taken from the Senior Cycle Review: Advisory Report (NCCA, 2022). I will call this the **architecture of a key competence** as it reflects on the building blocks or parts that make up the whole.

¹ OECD (2019) [OECD Learning Compass 2030 concept note.pdf](#)
[Knowledge for 2030 concept note.pdf \(oecd.org\)](#)
[Skills for 2030 concept note.pdf \(oecd.org\)](#)
[Attitudes and Values for 2030 concept note.pdf \(oecd.org\)](#)
[Core Foundations for 2030 concept note.pdf \(oecd.org\)](#)
[Transformative Competencies for 2030 concept note.pdf \(oecd.org\)](#)
[Student Agency for 2030 concept note.pdf \(oecd.org\)](#)

Table 2 The architecture of a key competency: the building blocks



Being explicit about the integrated relationship between knowledge, skills and values/dispositions and the consequential benefits for students' learning avoids the criticisms that are often levelled at a skills focus in a curriculum, that knowledge can be under-represented and undervalued. Their successful integration means that learners can potentially benefit in many different directions. For example, their knowledge and understanding can be deepened and they can be afforded opportunities to learn how to build knowledge as well as just to 'consume' knowledge. The application of knowledge can be sustained in pursuit of goals and challenges, and skills/values/dispositions can support students in making connections not only across their school learning but also to everyday contexts, in the here-and-now and in future work contexts. Hence the argument that a key competency approach sustains both life-long and life-wide learning. Perkins (2014), in his analysis of educating children for a changing world, called *FutureWise*, introduces the concept of life-worthy learning – something that is worth learning for life – and identifies key competencies as one of the key ingredients (see Chapter 1 on life-worthy learning, and Chapter 9 on Big-Know).

Thus far the focus in this section has been on the architecture of a competency but the discussion is about KEY competencies not just competencies per se. What are the added benefits of conceptualising a **key** competency framework? Here are some reasons:

- A key competency should stand out as important for learning and should take priority, so there is an expectation that a large number would not be identified as key.
- A key competency should be important for ALL students and not for a select few, so there is a question of equity and access to the learning associated with key competencies.
- Key competencies are interrelated and need to work together to maximise their potential. Although they are pulled apart in order to examine their distinctive characteristics, each one

is part of the overarching framework. The overall learning potential is reduced if they are considered in isolation. Together they help students learn how to learn.

- Key competencies are developmental; they will be learned and practiced with increasing sophistication and complexity, as students go through their educational journey.
- Lastly, key competencies should have wide application. As the name suggests, they should unlock and open up something – in the sense that they open up opportunities for learning across different domains, thus helping students to make connections between learning in diverse contexts, and specifically for responding to the bigger 21st learning challenges. I use the phrases ‘opportunities for learning’ and ‘making connections’ as this is not guaranteed and will depend on how the curriculum is implemented and the teaching/classroom approaches adopted. The overarching intention of a key competency framework needs to be made very clear to students if it is to realise its potential. This issue will be addressed several times throughout the report.

On the issue of wide application, the question arises with regard to the extent to which ALL key competencies can be equally integrated into ALL subjects, as implied in the equity and access requirement stated above. For example, can mathematics, history and physical education embrace all key competencies equally? Probably not, but it does not follow that certain subjects should ‘own’ certain key competencies. Key competencies challenge subject specialists to imagine and re-imagine the possibilities of their subject and exploit the additional opportunities for student learning that a key competency framework affords. This question will re-appear several times in this report as alternative ways of incorporating broader learning goals into a curriculum – as a key competency, a cross-curricular theme or a new subject – are reviewed.

3.3 A classification for key competencies

Drawing on comparative research and international competency frameworks, the *NCCA Primary Report 2018* identified consistent trends in the kinds of competencies that were included. Firstly, key competencies were described with three different points of reference that allowed them to be grouped separately. The points of reference were:

Personal characteristics – such as critical and creative thinking (**cognitive**); ways of collaborating and communication (**interpersonal**), and ways of managing self and learning (**intrapersonal**). They were consistently named in research literatures and international frameworks.

Tools for learning: these were often labelled as **literacies**, rather than competencies. They include reading/writing, numeracy and digital literacy. They are sometimes referred to as basic skills but they certainly go beyond the original expectations of the 3Rs, especially with the inclusion of digital and

multimedia literacy. They have applications and expectations of student learning and performance across the curriculum and thus fall within the scope of a key competency framework.

Transdisciplinary themes and challenges (labelled Big Picture): in this group was a mixture of transdisciplinary themes and newer areas of education, including citizenship education, education for sustainability, global competence – **the 21st century challenges**. Whether they fall within the scope of current definitions of key competencies or are emerging knowledge domains in their own right, they certainly call for student learning beyond the traditional disciplines. Their focus is on preparing students for **participating and contributing on a broader societal front in the face of societal challenges which have local, national and global implications**.

Table 3 summaries the proposed relationships between these various competencies within an overall framework. The different colours denote the differing points of reference, and the overlaps are designed to show the importance of integrating the knowledge component (whether disciplinary or transdisciplinary) with skills, values/dispositions, and tools.

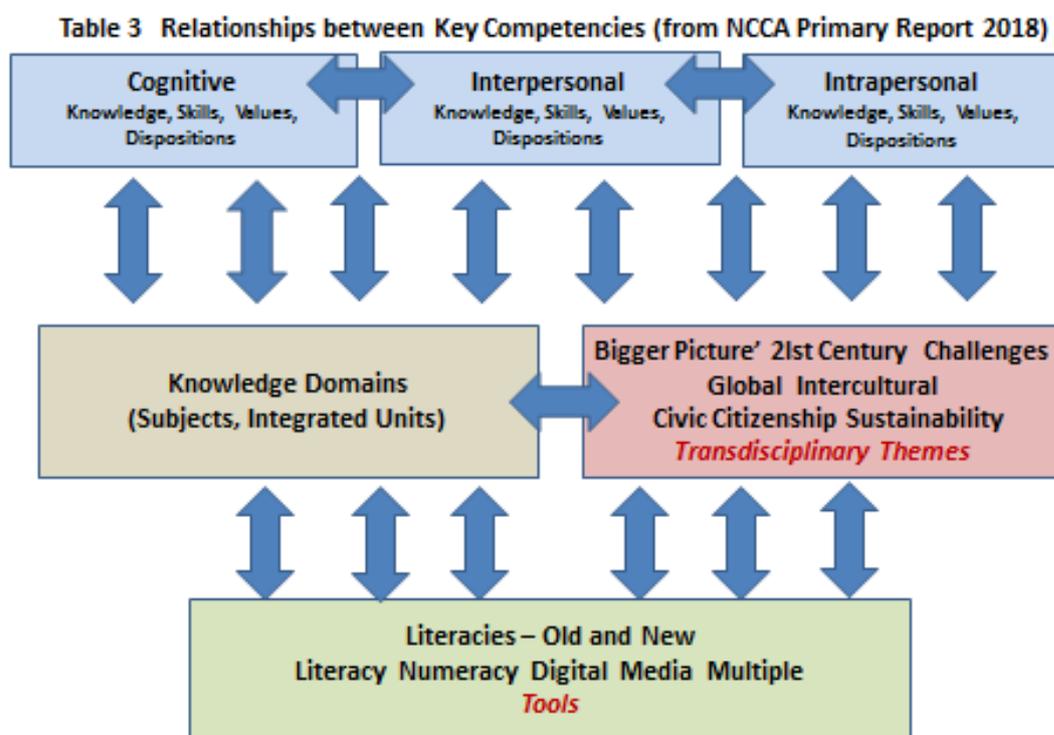


Table 4 presents a more detailed articulation of the cognitive, interpersonal, and intrapersonal key competencies in terms of their knowledge, skills and values/dispositions requirements. For now, these represent the most prominent key competencies identified from the 'personal characteristics' point of reference. In subsequent sections, I will review this table and see if it is sufficient, especially in

capturing the type of learning potentially required for participating and contributing on a broader societal front.

Table 4 Research based classification of key competencies (personal) from the NCCA Primary Report 2018

Type of Competence	Skills	Dispositions/Values	Knowledge
Cognitive (Ways of Thinking)	includes developing <i>cognitive skills</i> related to higher-order thinking – <ul style="list-style-type: none"> • reasoning and critical thinking, • thinking for understanding, • creativity and inventiveness, • problem-solving, decision-making, • systems thinking, • information retrieval and analysis • reflecting and metacognitive skills 	<i>Dispositions</i> related to being able to think well are - <ul style="list-style-type: none"> • being open-minded • seeking clarity and truth • being curious • being persistent • being adventurous - and other habits of mind often associated with high quality thinking. Underpinning <i>values</i> might be <ul style="list-style-type: none"> • the desire to seek challenges • to need cognitive stimulation • to achieve well • to be well informed • to act with integrity 	Knowledge related to <ul style="list-style-type: none"> • learning areas • subjects • Transdisciplinary themes/perspectives
Interpersonal (Ways of Interacting)	includes developing <i>social-emotional and social interaction skills</i> to maintain personal and work relationships- <ul style="list-style-type: none"> • listening skills • working as a member of a team • taking the lead in a group • skills to negotiate and influence others • interacting in socially and culturally sensitive ways • communicating clearly and being understood 	<i>Dispositions</i> related to interpersonal competency are – <ul style="list-style-type: none"> • being respectful • empathetic caring • being assertive • being able to give and take • being open to diverse views • being reliable, • taking responsibility Underpinning <i>values</i> might be <ul style="list-style-type: none"> • the desire to be fair-minded and act ethically • to be agreeable 	Knowledge related to <ul style="list-style-type: none"> • the competency areas – “knowing about” type of knowledge

		<ul style="list-style-type: none"> • to achieve well, • to be trustworthy • to recognise interdependence 	<p>Knowledge related to</p> <ul style="list-style-type: none"> • learning areas • subjects • Transdisciplinary themes/perspectives
<p>Intrapersonal (Ways of managing yourself and your learning)</p>	<p>orchestrates many of the other skills and dispositions in a dynamic way, it covers skills such as -</p> <ul style="list-style-type: none"> • developing self-awareness about thoughts, feelings and approaches to learning • skills in metacognitive thinking and emotional regulation • recognising one's own strengths, weaknesses and biases about school learning (in this context) • managing personal plans and projects, including time management • seeking out and responding to feedback 	<p>Dispositions related to intrapersonal competency are–</p> <ul style="list-style-type: none"> • wanting to improve • persisting and making an effort • being flexible and adaptable • striving for independence and ‘being in charge’ • recognising and managing risk • believing in self-efficacy <p>Underpinning <i>values</i> might be about-</p> <ul style="list-style-type: none"> • seeking autonomy, • being agentic and shaping your world • making a contribution • personal achievement and fulfilment • personal integrity • personal identity 	<p>Knowledge related to</p> <ul style="list-style-type: none"> • the competency areas – “knowing about” type of knowledge

4 Comparison of Key Competency Frameworks: International and Specific Jurisdictions

Two separate comparative reviews were carried out with the purpose of tracking recent and newer developments and approaches, and with the focus on any specific reference to upper secondary education.

4.1 Comparison of International Key Competency Frameworks

Table 5 compares five international frameworks; two of these were also included in the NCCA Primary Report 2018 and the remaining three are more recently created or updated.

The OECD DeSeCo framework and the US National Research Council Framework were included because both are firmly grounded in conceptual analysis, scholarship and research about competencies (DeSeCo) and the US National Research Council work (Pellegrino & Hilton, 2012) draws extensively on research into the psychological assessment of individual differences (differential psychology) as well as from research on effective learning (Bransford et al., 1999; Donovan & Bransford, 2005).

The three more recent frameworks are included because they highlight slightly different aspects of key competency and show how they can be developed in different directions.

For example, the UNESCO's International Bureau of Education (IBE)'s Future Competences project is very comprehensive and identified key competencies as '**macro-competences**'. This classification confirms the three aspects of competencies previously identified – cognitive, interpersonal and intrapersonal – as well as a range of important tools (literacies), but calls for a more radical reorganisation of traditional disciplinary boundaries towards a **transdisciplinary perspective**.

In contrast, the European Key Competence Framework can be more easily mapped onto well-established curriculum areas (languages, science and technology, mathematics, culture and arts), with **entrepreneurship** capturing innovation and related types of thinking (creativity, problem-solving), and **personal, social and learning to learn** being included under a single competency rather than the usual distinction between interpersonal and intrapersonal. **Citizenship** stands out as being framed in terms of a key competency rather than as a curriculum topic, as in citizenship education.

The most recent OECD Learning Compass Framework proposes the idea of 'transformative competencies' which I have called second-order key competencies because they cut across the cognitive, interpersonal and intrapersonal sets of skills, values and dispositions. These are blended together for a distinct purpose – **to create or add value to knowledge, actions and outcomes** (focus on innovation), **to reconcile tensions, dilemmas and contradictions** (focus on conflict resolution,

perspective-taking), and **to take responsibility** (focus on **students' agency** not just for their personal learning but also for **shaping their local and global world**). It should be remembered that the Learning Compass is a *learning* framework not a *curriculum* framework and is thus largely silent on how best to achieve these transformative competencies in terms of curriculum planning (though other strands of the work have developed a curriculum mapping tool and have discussed curriculum overload and related matters).

Three brief conclusions can be reached from this updated comparison of international frameworks:

- That the previous NCCA Primary 2018 classification as an organising schema is still useful – comprising of personal competencies (cognitive, interpersonal, intrapersonal), tools (literacies), transdisciplinary themes (citizenship, sustainability, global awareness), despite the cross-cutting way in which the OECD's Learning Compass has represented the idea of transformative competencies.
- There are emerging differences between the frameworks. While they all include references to the personal categories, three focus on those categories alone, two include specific mention of tools/literacies, and two specifically include references to wider societal concerns and issues.
- There is still some uncertainty whether to frame the broader learning goals related to 21st challenges as a 'new' curriculum subject or as a key competency to be integrated across the curriculum, as would be expected from the other key competencies in a framework. For example, should citizenship be added as a curriculum subject and be available for all students or should it be framed as a key competency in terms of knowledge, skills, values/dispositions and be integrated into curriculum planning as would be expected for the other 'personal' key competencies?

I will revisit these issues when the comparison of jurisdiction frameworks is completed.

Table 5 International Key Competency/21st Century Learning Frameworks Updated (Senior Cycle Report)

DeSeCo (OECD) Key Competencies (2004)	US National Research Council Classification Pellegrino & Hilton (2012)	UNESCO International Bureau of Education (IBE) Framework of Future Competences (2017) Macro Competences	European Key Competences for Lifelong Learning (2019 Revised)	OECD Learning Compass (2019) Transformative Competencies (cuts across categories)
Thinking (considered to be at the heart of the other competencies)	Cognitive <ul style="list-style-type: none"> • Cognitive processes and strategies • Knowledge and information sources and biases, communication • Creativity and innovation 	Lifelong learning <ul style="list-style-type: none"> • Creativity • Critical Thinking • Curiosity • Learning to learn 	Entrepreneurship <ul style="list-style-type: none"> • Transforming ideas • Creativity • Critical thinking • Problem solving • Planning and managing projects (different types of thinking described in other areas as well)	Creating new value: <ul style="list-style-type: none"> • Focus on innovation and sense of purpose • Creativity • Critical thinking and problem solving • Curiosity and open mind-set (collaboration, manage risks, adaptability)
Functioning in groups <ul style="list-style-type: none"> • Relate to others • Cooperate in teams • Manage and resolve conflicts 	Interpersonal <ul style="list-style-type: none"> • Teamwork and collaboration • Leadership 	Interacting with others <ul style="list-style-type: none"> • Teamwork • Collaboration • Negotiation 	Personal, social and learning how to learn <ul style="list-style-type: none"> • Collaborate in teams and negotiate • Able to seek support if needed • Empathize and manage conflict 	Reconciling tensions and dilemmas, contradictions <ul style="list-style-type: none"> • Empathy and respect for different views • Creativity and problem solving for conflict resolution (cognitive flexibility, perspective-taking, making complex and difficult decisions, tolerance of ambiguity, sense of responsibility)
Acting autonomously <ul style="list-style-type: none"> • Act within the big picture • Form and conduct life plans and personal projects 	Intrapersonal <ul style="list-style-type: none"> • Intellectual openness • Work ethic, conscientiousness 	Self-agency <ul style="list-style-type: none"> • Initiative • Drive • Motivation • Endurance/Grit 	Personal, social and learning to learn <ul style="list-style-type: none"> • Reflect on oneself, learn to learn • Effectively manage time and information 	Taking responsibility (related to student agency) <ul style="list-style-type: none"> • Strong moral compass and locus of control • Sense of integrity

<ul style="list-style-type: none"> Defend and assert rights 	<ul style="list-style-type: none"> Positive self-evaluation 	<ul style="list-style-type: none"> Resilience Responsibility 	<ul style="list-style-type: none"> Manage one's own learning and career Deal with complexity and uncertainty Support emotional well being Be health conscious 	<ul style="list-style-type: none"> Self-awareness and critical self-reflection Self-regulation <p>(compassion and respect for others)</p>
<p>Using tools interactively</p> <ul style="list-style-type: none"> Use language, symbols and texts Use knowledge and information Use technology 	(located in Cognitive section)	<p>Multi-literateness</p> <ul style="list-style-type: none"> Reading and writing Numeracy Digital 	<p>Literacy</p> <p>Multilingual</p> <p>Mathematical, scientific, technology and engineering</p> <p>Digital</p>	
		<p>Transdisciplinary</p> <ul style="list-style-type: none"> STEM, Humanities, Social Science <p>Interacting in and with the World</p> <ul style="list-style-type: none"> Local and global <p>Using diverse tools and resources</p> <ul style="list-style-type: none"> Sustainability 	<p>Citizenship</p> <ul style="list-style-type: none"> Act as responsible citizen Participate in civic life Awareness of global developments <p>Cultural awareness</p> <ul style="list-style-type: none"> Communicate through a range of arts and other cultural expressions Develop and express one's own ideas and sense of place in society 	

4.2 Comparison of Key Competency Frameworks in specific jurisdictions

For the purposes of comparison, **six jurisdictions** were chosen to examine developments in key competency frameworks by national/state curriculum bodies or agencies, and thus likely to be closer to curriculum planning in schools than the international frameworks.

Developing rigorous selection criteria for appropriate comparators was difficult, as in the last 20 years so many countries/states already have well developed competency frameworks or are moving in that direction, for example:

- Australia (and individual Australian states, e.g. Victoria, Queensland);
- New Zealand (one of the first countries to fully embrace the idea);
- Canada (and individual Canadian states, e.g., British Columbia, Ontario, Alberta);
- Pacific Asian states, like Hong Kong, Singapore, South Korea;
- European Union states (all 27 members recently participated in a study on how key competencies are progressing in their school education, Looney et al., 2022)
- As well as jurisdictions closer to home, Northern Ireland, Scotland and Wales.
- England stands out as different, by initially going in direction of skills (e.g., McGuinness, 1999), then halting and reverting to a more subject-based curriculum.
- Ireland, through NCCA's work has already considerable experience in this type of curriculum design, from the Junior Cycle Key Skills framework, the more recent Key Competencies for Primary Education (2023), and the earlier Key Skills Framework for Senior Cycle (2009).

Because so much development activity has taken place over a relatively short period (in terms of a curriculum time cycle), there is a substantial similarity and overlap between jurisdiction frameworks, as they tend to cross-reference one another while tailoring their own version to suit local cultural and educational policy contexts. They also tend to be influenced by trends in the international frameworks.

That said, six jurisdictions were selected for different reasons.

- Northern Ireland (2007) and New Zealand (2007) moved early on in developing a framework and thus provide **opportunities for capturing lessons learned**, especially New Zealand where extensive research on implementation is available (Sinnema (2011); Hipkins, 2018; McDowall & Hipkins, 2018; Chamberlain et al., 2021).
- Wales (2020) has only just settled on their framework which is being introduced in a phased way. Wales' approach was specifically **built on the experiences of Scotland** who adopted a similar approach in 2010.

- The Netherlands (2018) and Portugal (2019) are included as examples of more recent frameworks and were **case studies for the recent European Commission’s study of key competencies** in school education in Europe. Both countries were involved in a **curriculum mapping exercise** related to the OECD’s Learning Compass 2030 (Looney et al., 2022)
- Two examples from states in Canada are included and for different reasons. British Columbia (2016) is an example of a jurisdiction that has reformed their curriculum in two ways – introducing a **concept-based curriculum** (identifying Big Ideas to be learned in subjects at each grade level) as well as a **competency-based framework** (Core competencies to be identified and learned across the curriculum). Ontario (2020) is included because it includes **cross-curricular and integrated learning** beside their competency framework with some overlap in content between the two approaches, indicating a degree of tension in finding the best solution (see Wales as well).
- Finally, the NCCA’s Key Skills Framework for Senior Cycle (2009) is included as an anchor point and it will be discussed more extensively in a later section.

Table 6 compares these examples in tabular form.

The first general point to note is that none of the examples are specific to the upper phase of secondary education, with the exception of the NCCA Key Skills for Senior Cycle. All begin at primary level (and some in early years) and they extend to at least 16 years of age which is the end of compulsory schooling in most cases. A few extend to 17/18 years covering all phases of second level education.

The second general point is about the ‘name’ of the framework - where there is still variability. In contrast to the conceptual shift towards ‘competencies’ in the international frameworks, the term ‘skills’ is still prominent in the six jurisdictions examined – “thinking skills and personal capabilities”, “broad skills”, “integral skills”, “transferable skills” – all pointing to slightly different aspects of the meaning. It is also fair to say that, when the meaning of skills is further interrogated in the relevant curriculum documents, it is closely aligned to the meaning of competencies as embracing knowledge, skills, values/dispositions/attitudes. There appears to be more consistency in the meaning than in the terminology!

For the purposes of analysis at this stage, the content of each framework is organised under the key competency classification outlined in the earlier section – personal (cognitive, interpersonal, intrapersonal); literacies; and cross curricular, transdisciplinary themes/challenges.

Table 6 Comparison of Key Competency Frameworks across jurisdictions

Jurisdiction	Name of Framework	Classification of Key Competencies				
		Cognitive	Interpersonal	Intrapersonal	Literacies	Cross curricular themes/transdisciplinary topics, 21st century challenges
Northern Ireland	Thinking Skills and Personal Capabilities (2007) (ages 4-16) (some variation in terminology for ages 14-16)	Managing information; Thinking, problem-solving, decision-making; Being creative	Working with others	Self-management	Communication Using number ICT	Citizenship, Media awareness, Sustainable development
New Zealand	Key Competencies (2007) 5-19 years	Thinking	Relating to others; Participating and contributing	Managing self	Language, symbols, text	
Ireland (Senior Cycle)	Key Skills (2009) 16-18 years	Information processing; Critical and creative thinking	Communicating; Working with others	Being personally effective		
British Columbia/Canada	Core Competencies (plus Curricular Competencies (2016) 6-17 years	Thinking, creative and critical	Communication; Social responsibility	Positive personal and cultural identity; Personal awareness and responsibility Social awareness and responsibility	Literacy and Numeracy, ICT	Aboriginal Perspectives

Portugal	Exit Student Profile Competence Areas (2017 ongoing) 6-18 years	Information and communication; Reasoning and problem solving; Critical and creative thinking;	Interpersonal relations; Communication	Autonomy and personal development; Body awareness and mastery, appreciate importance of physical activity for well being	Language and text (to include different languages, and other symbol systems); Scientific, technical and technological knowledge	Well-being, health and environment; Aesthetic and artistic sensitivity and awareness, different cultural expressions
Netherlands	Netherlands Curriculum Review Broad Skills (2018/2019) 5-16 years	Ways of thinking and acting: Thinking critically; Creative thinking/action; Problem solving thinking and action	Ways of interacting with others: Social and cultural skills; Collaboration; Communication	Ways of knowing yourself: Self-regulation; Entrepreneurial thinking and acting; Orientation to yourself, your studies and career	Digital literacy explicitly added as a learning area (see below)	Sustainability Globalisation Health Technology
Wales	Curriculum Framework for Wales (2020) Integral Skills 3-16 years	Creativity and innovation; Critical thinking		Personal effectiveness; Planning and organising	Literacy Numeracy Digital (mandatory)	Relationships and sexuality; Human rights education; Diversity; Careers and work related experience Local, national and international contexts
Ontario/Canada	Transferable Skills (2020) 6-17 years	Critical thinking and problem solving, Innovation, creativity and entrepreneurship	Collaboration, Communication	Self-directed learning	Digital literacy	Global citizenship and sustainability (included in their competency framework); Financial Literacy; Environmental Education; Social-emotional learning skills; STEM education

Examining Table 6, what conclusions can be drawn about the communalities between the frameworks, the differences that emerge either in substance or emphasis, and any tensions/overlaps that can be identified? I will work through each of the key competency classifications.

Cognitive: All frameworks reference this type of competency and there is a high degree of consistency about content – critical thinking, creativity, reasoning, problem solving, and to a lesser extent a reference to processing/managing information. In some frameworks there is mention of innovation (Wales, Ontario) and entrepreneurship (Ontario), and to acting as well as thinking (Netherlands), reminding us that this competency is intended to enable learners to act – problem solve, make decisions - and respond to complex cognitive challenges and not just to learn well.

Interpersonal: Two types of interactions are consistently mentioned across all frameworks – communication and collaboration or working together. But there are also references to types of interactions that go beyond the ‘personal’, to participating and contributing more widely in society (New Zealand), to social responsibility (British Columbia) and to being culturally sensitive and aware (Netherlands, Portugal). This wider meaning of interaction was often echoed more fully in the transdisciplinary themes and topics, for example, citizenship education, human rights themes. Wales made no explicit reference to interacting with others as part of their ‘integral skills’ but has a cross-curricular theme on relationships and sexuality, as well as on human rights and diversity. Ontario has named global citizenship and sustainability as a key competency in its own right.

Intrapersonal: All frameworks mention some aspect of qualities ‘within the person’ and there is perhaps more variety in the meaning associated with this competency than elsewhere. One strand primarily references managing oneself as a learner, being personally effective, being oriented toward studies and career, setting goals, being self-directed and self-regulated, emphasising self as learner in achieving goals and preparing for future learning. Another strand points to a different kind of autonomy, being able to assert and defend rights (New Zealand), having a positive cultural and social identity (British Columbia), being able to make a positive contribution to society. There are overlaps between this latter meaning related to civic responsibility and the reference to participating and contributing more widely to society mentioned above, reminding us that competencies do not work in isolation and, in practice, will be blended together to achieve goals (as captured in the OECD’s transformative competencies). Another strand to emerge under this heading points to the importance of maintaining both social-emotional, mental and physical well-being (Portugal), which sometimes appears as a cross-curricular theme, as in health education or social-emotional learning skills. Portugal’s framework in particular positions itself as adopting a wholistic approach.

Literacies: Language literacy, numeracy and digital literacy are mentioned in all the frameworks. This is perhaps not surprising as the frameworks apply from primary school where language, literacy and numeracy have long been considered as cross-curricular foundational skills. Digital literacy is also highly prominent and has been given added weight in some frameworks, for example, being explicitly added as a learning area (Netherlands) or being made mandatory (Northern Ireland, Wales).

Cross-curricular themes, transdisciplinary topics, 21st century challenges: Included under this heading is a mixture of topics, sometimes labelled as cross-curricular learning or perspectives, or as transdisciplinary topics that span beyond the usual boundaries of single subjects. The transdisciplinary focus is normally on what are referred to as 21st century challenges (climate change and sustainability, global equalities, technology, health and wellbeing) or has specific cultural significance (Aboriginal perspective in the case of British Columbia). In terms of conceptualising a key competency framework, the questions identified after the review of the international frameworks (Table 5) remain. In terms of curriculum design and planning, should these 'new' curriculum topics be seen as emerging curriculum topics/subject areas in their own right and or as key competencies to be integrated across the curriculum, as would be expected from other key competencies in a framework? The comparison across the jurisdictions has not added much clarity. For example, only Ontario has identified global citizenship and sustainability as a key competency that explicitly sits alongside the other key competencies, but it also includes environmental education as an area of cross-curricular learning.

4.3 Conclusions from the framework comparisons

From comparing both international frameworks and from specific jurisdictions, several conclusions can be reached:

There is much overlap between the frameworks – between international frameworks and jurisdictions, and between the framework reviewed in this report and the NCCA Primary Report 2018. There is also much cross-referencing which reinforces those overlaps. That said, there is an emerging consensus, though no one absolutely right answer, as jurisdictions adapt and modify their final versions to local policy contexts.

Returning to the original impetus for including broader learning goals into a future-oriented curriculum, two different types of responses can be identified:

The first type of response identifies the need for a more person-oriented type of learning, framed as key competencies to include knowledge, skills, values, dispositions and attitudes. The focus is on the power of skills/values/dispositions for deeper learning and knowledge building within a specific

knowledge context and potentially to aid transfer across contexts. This approach is largely neutral with regard to how the content of the knowledge is framed – traditional school subjects, learning areas, transdisciplinary or cross-disciplinary knowledge. The interplay between the knowledge/skills/values/dispositions is at the heart of the approach as well as developing the capacity of the learner to make connections. The key competencies that are consistently identified in this person-oriented approach are related to cognitive competence (ways of thinking), interpersonal competence (ways of interacting) and intrapersonal competence (ways of managing self for purposes of learning and participating more widely in society). Tools for learning, the literacies, can also be characterised in this way as they too are largely neutral with regard to a knowledge domain, and are widely acknowledged to be cross-curricular types of learning.

In contrast, the second type of response is more knowledge-focussed and points to the need for some re-organisation of subject knowledge boundaries and a more transdisciplinary approach to topic selection in order to respond to 21st century conceptual and practical challenges. Skills/values/dispositions are needed for deeper learning in these newer knowledge domains as well, but the types of learning tend to be named by the nature of the challenge presented rather than the skills/values/dispositions, for example, global citizenship and sustainability, global competence, education for sustainability, media awareness, health education, education for well-being.

It is clear that there are tensions between the two approaches as curriculum designers attempt to reconcile them, for example, deciding whether learning to participate and contribute to community/society should be framed as a key competency, as a 'new' subject, or as cross-curriculum theme. There is also the question of equity, especially when the focus is on upper secondary education where there are often several optional pathways for learners to pursue, and even choices within a single pathway. It would be important that ALL learners have the opportunity to experience these broader learning goals, however they are framed.

For all of these reasons, it may be useful when considering a framework for Senior Cycle to broaden the scope of the 'personal' categories to a four-way classification to include aspects the collective agency that are represented under the transdisciplinary headings, and to re-energise the skills/values/dispositions that are needed for collective action beyond the personal. For clarity, the names could be *Ways of Thinking*, *Ways of Interacting with Others*, *Ways of Managing Self and Own Learning*, *Ways of Participating in Society* (drawing on aspects of both the interpersonal and intrapersonal).

At this stage it is worth reminding readers that while key competency categories get pulled apart and dissected to understand their distinctiveness, in practice they work together when learners are faced

with a learning challenge. For example, a student may be working on solving a problem (cognitive) as part of a group project (interpersonal) and will also need to manage their own learning in terms of persevering in the face of difficulty and perhaps managing feelings of inadequacy in comparison to others in the group (intrapersonal). No doubt also, the student will use of range of literacies such as reading materials, interpreting numerical data, and searching the internet. The full power of a key competency approach for learning can only be realised when they work together in this way, a point that was drawn out in the OECD's Learning Compass' idea of 'transformative' competencies.

5 Towards a Key Competency Framework for Senior Cycle

The purpose of this section is to focus on more specific recommendations about key competencies for the Senior Cycle. The section will consist of three parts:

- A summary of the key conclusions from the previous sections on the recent developments in key competency research, and from the comparative reviews of competency frameworks.
- Because the review has not revealed anything specific for upper secondary education, the purposes and guiding principles from the NCCA Senior Cycle Advisory Report will be used to check priorities and alignments.
- Then the current NCCA Senior Cycle Key Skills Framework (2009) will be reviewed to see if it remains fit for purpose and/or in what ways, if any, it needs to be refreshed in the light of how competency and skills perspectives have developed since the framework was first designed in the period from 2006 to 2009, and the vision for the redeveloped Senior Cycle.

5.1 Key conclusions from the review so far

- A key competency approach is a response to the need to include broader learning goals in a school curriculum for all ages. Broader learning goals usually refer to learning beyond the boundaries of traditional school subjects, with the intention of deepening learning and preparing learners for 21st challenges.
- The architecture of a key competency has been refined to include knowledge, skills, values/dispositions. This represents a shift in meaning beyond skills alone. That said, many frameworks continue to use the term 'skills', though the implied meaning is often more aligned with the architecture of a competency.
- For a competency to be 'key' it should have broad application for a student's learning, both for their current and future learning, life-wide as well as life-long. Being 'key' implies that they are important for ALL students (not for a select few), that they can be learned and practiced with increasing sophistication and maturity depending on the context and on the age/experience of the learner. So there is an expectation that students' learning progresses in terms of acquisition, practice, and key competency achievement.
- For key competencies to have broad application, they must become visible to the learner through pedagogical approaches and through the learner's own reflections. Only then can an overarching key competency approach achieve its potential in helping students learn how to learn.
- Key competencies are interrelated and are most powerful when they work together to transform learning, hence the emergence of the term 'transformative' competencies. Key

competencies enable students to act in the face of complex challenges, implying 'know-how' as well as 'know-what'.

- Key competency frameworks include alternative approaches to embracing broader learning goals, through descriptions of knowledge/skills/dispositions that reference; (1) personal learning, such as ways of thinking, ways of interacting, ways of managing oneself; (2) tools for learning, such as reading, numeracy and digital/multimedia learning; and (3) identifying new knowledge areas, mostly cross-disciplinary or transdisciplinary, related to 21st century challenges. Many frameworks, though not all, include all three approaches. The alternative approaches have different consequences for curriculum design and curriculum planning.
- There is considerable consistency with regard to the classification of the skills/values/dispositions to be considered as key with regard to personal learning. The categories are **cognitive** (ways of thinking), **interpersonal** (ways of interacting) and **intrapersonal** (ways of managing oneself). However, it is worthwhile to examine in more detail what is included, particularly in the interpersonal and intrapersonal categories. Two meanings emerge, at least in some frameworks. For example, in the interpersonal category, the first meaning implies personal interactions and communications as in school or family groups, and the second meaning points to interactions beyond the personal, as in participating and contributing to wider community and society. A similar distinction can be seen within the intrapersonal category. The first meaning references managing oneself as a learner in terms of self-directed learning, achieving personal goals and so on, while the second meaning captures a different kind of autonomy, through accepting and exercising civic responsibility and making contributions as a collective as well as an individual.
- Another strand to emerge within the intrapersonal category that goes beyond the specific focus of managing oneself as a learner embraces a wider meaning of 'looking after yourself' - to include the social and emotional self, mental health and wellbeing in the broad context.
- In order to capture the nuances of meaning described above, the recommendation is to expand the above 3-way classification to a four-way classification and rename the categories to avoid ambiguity about is included. The proposed names of the four-way classification are: **Ways of Thinking; Ways of Interacting with Others; Ways of Managing Own Learning and Self** (to include the reference to wellbeing); **Ways of Participating in Society**. This proposed classification is provisional, pending the consideration of the principles and priorities for the future Senior Cycle.
- In more recent key competency frameworks, the concept of student agency has gained more prominence and that meaning has been extended with the addition of the concept of co-

agency, recognising the importance of the distinction between enabling students to act both as an individual in their own interests and as part of a collective in the wider societal and global interest.

- Literacies, as tools for learning, are included in most frameworks. With the exception of digital literacy, reading and numeracy are considered as foundational and assumed for later learning.
- Some version of the newer 21st topics is included in most frameworks and there are tensions about how they are best designed into the curriculum. In the long run it may be more appropriate if these emerging curricular areas were classified as the 'knowledge' component, of the knowledge, skills, values/dispositions combination, and thus treated in the same way as any other curricular knowledge domain. The risk here is that, if pathways or topics are optional, not all students might have access to study these newer areas.
- Finally, it should be repeated that key competencies and associated frameworks that have been reviewed tend to apply across all phases of primary and secondary education, and their content is not normally tailored for a specific phase, such as the Senior Cycle Leaving Cert. However, while being applicable to all phases, the expectation is that key competencies are learned and are practiced with increasing sophistication and mastery, as learners progress through their educational journey and face new and more complex learning challenges.

5.2 Aligning with the NCCA vision for Senior Cycle

Because of the absence from the research and comparative review of key competencies specific to the upper phase of secondary education, I will return to the NCCA Senior Cycle Advisory Report (2022) to examine the vision, purposes and priorities that have already been articulated for the reformed Senior Cycle, to guide the direction on what to include for an appropriate key competency framework.

The Senior Cycle Advisory Report already acknowledges the importance of the integrated development of knowledge, skills, values and dispositions, which is at the core of a key competency approach, recognising the educational benefits of **being explicit** about these constituent parts as well as the potential powerful learning benefits of their integration and combination.

In the section on the purpose, vision and principles for the new senior cycle, it states specifically that it should

“help every student to become more enriched, engaged and competent, as they further develop their knowledge, skills and dispositions in an integrated way” (NCCA, 2022, p.20).

In addition, specific mention is made in the statement about purpose, recognising that students' education at this stage should contribute to both individual as well as wider societal interests, and that the senior cycle should:

“.....serve collective as well as individual purposes in schools and other educational settings and in the wider society.” (NCCA, 2022, p.20)

The guiding principles in the report are particularly helpful in identifying what competencies should be prioritised for inclusion in a Senior Cycle Framework. Five of those principles are particularly relevant as they point to dimensions of broader goals for student learning, classroom interactions, and school culture, consistent with the intention of any key competency framework.

Table 7 shows how the proposed key competency framework emerging from the current review, maps onto the NCCA guiding principles. The importance of **Ways of Interacting with Others** maps to the Wellbeing and Relationship principle as well as to the underpinning values expressed in **Inclusive Education and Diversity** principle. The inclusion of a more explicit focus on wellbeing within Ways of Managing Own Learning and Self is also consistent with the Wellbeing and Relationships principle. **Ways of Thinking** is unambiguously related to the need for **Challenge, Engagement and Creativity** principle. The distinction between personal agency, **Ways of Managing Self and Own Learning**, and the collective agency, **Ways of Participating in Society**, mirrors the differences between the principles **Learning to Learn, Learning for Life**, and **Participation and Citizenship**. The level of alignment gives some reassurance that the proposed framework has the potential to reflect the NCCA’s guiding principles for the Senior Cycle, with the intention of advancing student learning in those directions.

The remaining three principles, **Choice and Flexibility, Continuity and Transitions, Learning Environments and Partnerships**, are not so immediately relevant to the *content* of the framework, though they too will be important when considering the extent to which students can access the key competencies (given choice and different pathways), how the learning is supported throughout the Senior Cycle (in terms of increasing progression), and the ways in which a school learning environment provides students with the opportunities to acquire and practice the competencies in authentic settings.

Table 7 Aligning Guiding Principles for Senior Cycle and Proposed Key Competency Classification

Guiding Principles for Senior Cycle	Proposed Key Competency Classification for Senior Cycle
<p>Wellbeing and relationships</p> <p>Students’ experiences in school, in other educational settings and in wider society contribute directly to their holistic development. Students’ experiences throughout senior cycle are supported in the relationships they have with teachers, peers, parents and other significant adults.</p>	<p>Ways of Interacting with Others (interpersonal with the focus on learning in groups, with peers and teachers)</p> <p>Ways of Managing Own Learning and Self (focus on wellbeing)</p>
<p>Inclusive education and diversity</p> <p>The educational experience in senior cycle is inclusive of every student, valuing and respecting diversity and the contribution each student can make. Every student has enjoyable experiences in and meaningful outcomes from senior cycle education.</p>	<p>Ways of Interacting with Others (interpersonal with a specific focus on values of diversity and inclusion)</p>
<p>Challenge, engagement and creativity</p> <p>Students experience a challenging, engaging and high-quality education with opportunities for new and deep learning and fro critical, creative and innovative thinking</p>	<p>Ways of Thinking (cognitive, with a focus on deep learning, critical, creative and innovative thinking)</p>
<p>Learning to learn, learning for life</p> <p>Students develop greater independence in, and understanding of, how they learn; deepen their capacity to meet challenges of life within and beyond school; and have second-chance opportunities for learning and assessment.</p>	<p>Ways of Managing Self and Own Learning (intrapersonal, with the focus on learning to learn, personal goals and self-efficacy)</p>
<p>Participation and citizenship</p> <p>Students participate in schools, communities and society, exercising their rights and responsibilities as local, national and global citizens in ethical and sustainable ways.</p>	<p>Ways of Participating in Society (focus on collective agency, beyond the personal)</p>

5.3 Reviewing and Refreshing the Senior Cycle Key Skills Framework

The current Senior Cycle Key Skills Framework was published in 2009 but its origins began earlier. It was created, designed and modified between 2006-2009, when considerable development work and piloting was completed with samples of schools, teachers and students (Dempsey, 2016). Five key

skills are included in the framework: information processing; critical and creative thinking; communication; working with others; and being personally effective, with the learner as the central focus (as outlined in a diagram as well as in the accompanying text). The introductory text outlines the general philosophy and intention of the framework ([Senior Cycle Key Skills Framework | NCCA](#))

The question posed here is: How does the current Key Skills Framework measure up against more recent developments in key competency research and the comparative analyses reported in the previous sections? I will review it in three ways:

- With regard to the **conceptual ‘architecture’** of a key competency and the extent to which it explicitly articulates the three structural components – knowledge, skills, values/dispositions.
- With regard to the **classification and content** of the key skills that are included and whether they continue to be fit for purpose and meet the expectations of the NCCA guiding principles.
- With regard to the **overarching intention of a key competency** framework to be applied across the curriculum and recognised as such, not just by the curriculum designers but by schools, teachers and particularly by the students themselves.

Knowledge, skills, values/dispositions: Key competencies are now regularly defined in these terms which I am calling the conceptual architecture of a key competency. As the name suggests, the NCCA Key Skills Framework focusses primarily on the skills aspect, representing the prevailing viewpoint at the time the framework was designed. That said, the framework adopts an explicit position with regard to the integration of the skills with subject knowledge,

“learners will encounter the key skills frequently and in an integrated way in many areas of curriculum. As each new subject, short course or transition unit is developed, the key skills will be embedded in the learning outcomes.” (NCCA, 2009, p 2).

An examination of recent module specifications (e.g., LCA Mathematical Application, 2021, and LCE English and Communication, 2021) shows that the key skills are clearly foregrounded in the documents, with additional descriptions of how they are realised throughout the modules. So there is no doubt that the knowledge aspect of a key competency is accounted for, from the point of view of the within-subject curriculum. The risk is that, from the student’s point of view, the key skills may become ‘buried’ in the subject teaching and their general application across-the-curriculum may be obscured.

With regard to values/dispositions, there is little explicit mention of these in the key skills learning outcomes. However, a stronger statement about values and dispositions can be found in the ‘vision of the learner’ that currently appears in each subject/module specification, under the headings “Resourceful”, “Confident”, “Engaged”, “Active Learners”. Several dispositions/values that would

easily align with the key skills in the framework are mentioned there, for example, curiosity, open-mindedness, connecting learning, commitment to learning, coping with setbacks, having high levels of self-efficacy. These desired learning goals would need stronger articulation within a competency framework.

Classification and content of the current framework: With regard to the type of learning areas that are covered by the five key skills in the framework, they have stood the test of time for the most part. The exception being the absence of a specific outward-facing expectation that students should develop competence with regard to their futures as citizens, both locally and globally and very limited elaboration of the importance of well-being and personal effectiveness. To explain further, the five key skills can be mapped to the proposed key competency classification in the following ways:

Table 8 Mapping the Proposed Key Competency Classification with the Previous Key Skills Framework	
Proposed Key Competency Framework for Senior Cycle	Previous Senior Cycle Key Skills Framework
<p>Ways of Thinking (cognitive, with a focus on deep learning, critical and creative thinking and innovation)</p>	<p>Information-processing Critical and creative thinking</p>
<p>Ways of Interacting with Others (interpersonal, with the focus primarily on learning in groups, with peers, teachers, family)</p>	<p>Working with others Communication</p>
<p>Ways of Managing Own Learning and Self (intrapersonal, with the focus on personal goals, learning to learn, and on personal agency) (intrapersonal, with a focus on wellbeing and holistic development)</p>	<p>Being personally effective</p>
<p>Ways of Participating in Society (focus on developing a collective agency, beyond the personal, with the purposed of developing competence to participate as a citizen, locally and globally)</p>	<p>No specific mention, even under the other headings</p>

While the Key Skills Framework makes a strong statement on how the five key skills can work together in the interests of 'learning how to learn', the focus of that learning is primarily on being 'personally effective', in terms of being able to evaluate one's strengths and weaknesses, how to improve learning, identify personal goals, and develop personal qualities to help in the face of obstacles, and so on. As reviewed in the previous sections, that gap between the personal and the collective is commonly observed and is either absent or blurred in other frameworks that have been reviewed. For that reason, the recommendation is to clearly separate out the two meanings into distinct competencies. The separation is also more in line with the guiding principles and expectations of the redeveloped Senior Cycle. The inclusion of the Ways of Participating in Society as a key competency may also go some way to address the wider 21st century learning agenda. That said, there may be new curriculum design challenges in finding ways to integrate it into subject teaching across the curriculum.

The overarching intention of a key competency framework: To repeat a point from the earlier discussion of the desired attributes of a key competency framework and what makes it 'key', is that it should unlock and open up opportunities for learning across different domains, help students make connections and facilitate the transfer of learning, hence the older terminology of 'transferable' skills. That key skills apply across the curriculum is readily acknowledged in the current Key Skills Framework and recognised in the way they are being integrated into subject specifications. But to achieve its objectives as an overarching framework, key competency learning needs to face in two directions at once, towards deeper understanding and application in the context of subject teaching, but also in the direction of skills/values/dispositions so that they become more visible to the students. Students need to recognise that they are acquiring and gaining expertise in practicing these skills, so that they develop the habit of doing so, and recognise their importance beyond the immediate context in which they were first encountered. In the long run, this is a pedagogical issue but it **needs to be made clear at the level of curriculum design as well.**

Finally, beyond the Communication key skill, little mention is made in the Senior Cycle Key Skills Framework of other literacies, particularly digital competence, though these literacies are integrated into key competency/skills frameworks in earlier phases of education.

5.4 Key recommendations about refreshing the orientation and content of the current Key Skills Framework

- The Key Skills Framework was a product of its time. It would benefit from the richer understanding of what it means to be competent, through embracing the architecture of key competencies, and further articulating the values/dispositions related to each skill.

- When integrating key competencies into subject knowledge and teaching, it is important to ensure that they do not get buried by the imperative of subject teaching, even if they are successful in deepening understanding and helping to build subject knowledge.
- The overarching intention and purpose of a key competency framework needs to be made clear in curriculum design, teacher professional development, classroom practices, and especially to students. Only then is it likely to contribute to their lifelong and life wide learning.
- With regard to the classification of key competencies there is a need to include a more outer-directed focus on developing key competencies, not just for personal achievement and future employment but also as a citizen participating in society. That may go some way to prepare students for the challenges normally included in the 21st century learning agenda. Consistent with this wider focus, it may be advisable to expand on the meaning of managing self to include a more explicit focus on social-emotional aspects of the self and wellbeing. In addition, there may be other opportunities in the redeveloped Senior Cycle to include units or new subjects that speak more directly to transdisciplinary topics like sustainability, health and well-being, local and global inequalities.
- Given the focus on creativity in one of the Guiding Principles - *Challenge, Engagement and Creativity* - it may be wise to widen the scope of that competency (in terms of innovation, invention and entrepreneurial thinking) to put a greater emphasis on that way of thinking and give it greater prominence as a key competence. Currently, it is combined as *Critical and Creative Thinking*, with critical thinking being more fully elaborated.
- There may be a need to have a more direct focus on digital competence as a tool for interrogating information, problem-solving, communicating with others, and recognising its power in society more generally (e.g., remote working, identifying and coping with disinformation). Students may be learning this elsewhere in the curriculum and, if so, explicit connections need to be made with key competencies.
- Finally, the question remains about the most appropriate title for the framework going forward – Key Skills or Key Competencies. Conceptually, it looks like NCCA is embracing the architecture of key competencies and I have critiqued the Key Skills Framework from that perspective. However, there may be other considerations re the exact title. For example, whether to maintain consistency with the Junior Cycle Key Skills title, or to follow the example of the primary curriculum title of Key Competencies.

6 Continuity and progression across phases of education

In comparison to other jurisdictions, NCAA's approach to key skills/key competency frameworks stands out as different in that there are distinctive frameworks for different phases of education, from early years to the senior cycle. Currently, there are four frameworks: Aistear for Early Years (2009); Key Competencies for Primary Curriculum (2023, draft version 2020); Junior Cycle Key Skills (2016); and the proposed Key Competency Framework for Senior Cycle which will draw upon this research and will modify the previous Senior Cycle Key Skills Framework (2009).

The reasons for the different frameworks may be simply historical, in the sense that the redevelopment work for each phase just happened at different times, and this may have resulted in unanticipated discontinuities (if any) between the frameworks. Or it may be that the intention was always to have frameworks that were more developmentally appropriate to the ages/stages of learners' development and/or to 'fit' more generally the ecology of the curriculum at a particular stage. Whatever the reason, accidental or intentional, the challenge is to ensure both a sense of continuity in learning as students transition from one stage of education to the next, and also ensure there is an appropriate shift in the level of challenge in the curriculum, so that learners do not have the experience of repetition and that teachers have appropriate expectations of what learners know and can do when they transition between different phases of learning and are taught by different teachers as they progress through schooling. That is true for all kinds of learning and not confined to key competencies. But because this type of broader learning is still bedding down both nationally and internationally, then there is probably a need to be very explicit about continuity and progression.

Table 9 maps the four NCCA frameworks and uses the key competency classification from *the NCCA Primary Report 2018*, see Table 3 in this report, as an organising scheme. That column is grey shaded in the table to distinguish it from published NCCA frameworks. To remind the reader, the categories from that classification are: *Cognitive, Interpersonal, Intrapersonal; 21st Century Challenges*, often as transdisciplinary themes/topics; and *Literacies*, as cross-curricular tools for learning.

The first point to note is there is broad agreement at the level of the main headings for the first three categories. Each framework makes reference to some aspect of thinking (cognitive), to the importance of interaction with others and communication (interpersonal), and to some degree of self-management of learning and maintaining a positive self-image as a learner (intrapersonal). Sometimes the interpersonal and the intrapersonal are blended, but the focus can still be recognised.

Table 9 Linking NCCA Frameworks across phases of education from Early Years to Senior Cycle

Classification of Key Competencies (McGuinness, 2018) <i>Used as an organising scheme</i>			Aistear Framework: Themes and Aims (2009)	Key Competencies for Primary Curriculum (2023)	Key Skills for Junior Cycle (2017)	Proposed Key Competencies for Senior Cycle (2022) (modified from previous Key Skills Senior Cycle Framework, 2009) <i>Italics indicate values/dispositional elements of the competency</i>
Knowledge	Skills	Values and dispositions				
Cognitive			<p>Exploring and Thinking Making sense, observing, questioning, investigating, understanding, problem-solving. Positive dispositions, curiosity, playfulness, perseverance, risk-taking.</p>	<p>Being Creative Participating and enjoying creative and cultural experiences; being curious, being imaginative, being innovative, using creative processes, exploring alternative ways of communicating</p> <p>(as well as references to thinking and problem solving through mathematics and digital technologies, see below)</p>	<p>Managing information and thinking – being curious; gathering, recording and evaluating information and data; thinking creatively and critically; reflecting on and evaluating learning;</p> <p>Being Creative – imagining; exploring options and alternatives; implementing ideas and taking actions, learning creatively</p>	<p>Ways of Thinking -</p> <p>Information processing- gathering information and evaluating information and data from a range of sources, checking for reliability. <i>Being systematic and well-organised, wanting to be well-informed.</i></p> <p>Critical thinking and problem solving- examining patterns and relationships, analysing and making good arguments, making predictions and seeking evidence, analysing problems and decisions, exploring alternatives and options. <i>Being curious, being persistent and wanting to achieve well.</i></p> <p>Creative thinking and innovation- exploring questions, ideas and actions, generating ideas, combining and synthesising ideas, enhancing products and other people’s ideas, experimenting</p>

				with different designs, actions and outcomes <i>Being open-minded, learning from mistakes and failures, wanting to be creative.</i>
Interpersonal , including working with others, respecting others, communication, negotiating and influencing, managing and resolving conflicts. Dispositions and values such as being respectful, wanting to be understood, being reliable and responsible.	Communicating Non-verbal communication; language; creative expression; Identity and Belonging Expression of rights and understanding of rights/views of others.	Being a communicator and using language (see below under Literacies) Being an active learner Playing, learning and working with others; caring for and showing empathy with others; fostering and maintaining positive relationships, dealing with conflict, respecting difference; learning about others	Working with others – developing relationships and dealing with conflict; co-operating; respecting difference; contributing; learning with others; Communication – using language; using number; listening and expressing; performing and presenting; discussing and debating	Ways of Interacting with Others Working with others – working co-operatively in pairs, groups and teams; working towards collective goals;; identifying responsibilities and different roles in a group and (e.g., leader, team member); developing good relationships with others and a sense of wellbeing in a group; negotiating and resolving conflicts; reviewing the work of the group ones' own contribution <i>Being flexible and adaptable; showing respect for diverse views; taking responsibility for joint decisions .</i> Communicating - analysing and interpreting texts and other forms of communication; expressing opinions, speculating and discussing; engaging in dialogue, composing and performing in a variety of ways; communicating in online environments.

				<i>Listening and showing empathy, being open to diverse views, seeking to be clearly understood</i>
Intrapersonal , including self – management of emotions as well as learning, self-regulation, personal flexibility, resilience, knowing strengths and weaknesses, plus the desire to improve, making an effort, believing in self-efficacy, learner agency	<p>Well-Being Being strong psychologically and socially, fit and healthy, creative and spiritual, positive outlook on learning and on life</p> <p>Identity and Belonging Strong self-identity, seeing themselves as capable learners</p>	<p>Being an active learner Being able to reflect on learning;</p> <p>Being well Showing awareness of how to make good choices in relation to wellbeing; participating with growing confidence and skill in physical activity; being self-aware and resilient; acting responsibly and showing care towards self and others; being spiritual and having a sense of purpose and meaning; being persistent and flexible in solving problems; being able to assess risk and respond</p>	<p>Managing myself – knowing myself; making considered decisions; setting and achieving personal goals; being able to reflect on my learning</p> <p>Staying safe – being healthy and physically active; being social; being safe; being spiritual; being confident; being positive about learning; being responsible, safe and ethically using technology</p> <p>(additional Wellbeing Framework in Junior Cycle)</p>	<p>Ways of Managing Own Learning and Self</p> <p>Learning how to learn - developing and using metacognitive strategies to improve learning; reflecting on current approaches and making plans; considering how to combine approaches in creative ways.</p> <p><i>Developing mind-sets related to exercising agency over their own learning, a “growth mind-set”, being prepared to make the effort and maintain a positive sense of self.</i></p> <p>Being personally effective - able to appraise themselves, evaluate their own performance in discussion with others, receive and respond to feedback; identifying, evaluating and achieving personal goals, as well as action plans; Building resilience in the face of challenges; taking initiatives; developing, being flexible and being able to persevere when difficulties arise; becoming confident and being able to assert themselves as a person.</p>

				<p><i>Wanting to improve, taking responsibility, exercising personal agency</i></p> <p>Enhancing the wellbeing of self and others – understanding the importance of emotional, social and physical wellbeing on everyday experiences and activities; developing awareness of how stresses and worries can affect wellbeing, identifying sources of advice and seeking help as appropriate; recognising the importance of physical activity and nutrition on wellbeing, making plans and taking actions to achieve a good balance; knowing the importance of social interactions with friends, family, teachers on well-being and mental health and being prepared to reach out and help others; developing strategies to ‘lift your mood’ and maintain an optimistic outlook.</p> <p>Wanting to live responsibly and take actions to improve the wellbeing of self and others, having a sense of purpose and meaning</p>
<p>21st Century Challenges participating and contributing in a broader sense, citizenship, global awareness, awareness of economic and environment sustainability</p>	<p>Identity and Belonging Group and community identity, life stories, expression of rights and understanding of rights/views of others</p>	<p>Being an active citizen Developing an understanding and acting on the rights and responsibilities of myself and others; experiencing learning through democratic processes; recognising injustice and inequality and ways to take action;</p>	<p>Relevant short units on Civic, Society and Political Education Social, Personal and Health Education</p>	<p>Ways of Participating in Society Investigating moral and ethical dimensions of developments, events and issues; Appreciating and practicing democratic values, for example, at school level; Exploring issues related to personal and social rights and responsibilities;</p>

		developing capacity to make choices in favour of a sustainable future		Developing a sense of connectedness to local, national and global communities and how to contribute to a more just and sustainable world; Carving out a role and sense of agency in society and for adult life. <i>Developing and acting with a strong moral compass; exercising collective agency, wanting to make a difference</i>
Literacies	Communicating Non-verbal communication Oral language Mark-making, recognising symbols, representing and expressing meaning through symbols	Communicating and using language Developing understanding and enjoyment of words and language; developing oracy; reading for enjoyment and with critical understanding; writing for different purposes and for a variety of audiences; exploring and creating a variety of texts Being mathematical Thinking and communicating mathematically; solving problems and making sense of the world using mathematics; estimating, predicting and calculating; recognising relationships, trends, connections and patterns; interpreting and processing information and data Being a digital learner Communicating and collaborating with others through digital technology;	Being Literate Being Numerate Digital Technology mentioned across all the above skills	Option 1 Include literacies (communicating, language, numeracy, digital) as supporting tools for the other key competencies . Option 2 Include literacies as a key competency in their own right.

		accessing, analysing and managing content using digital technology; enabling content creation, problem-solving and creativity using digital technology; interacting ethically and responsibly using digital technology		
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To explain further:

- the early phases of education tend to focus more on the exploratory aspects of thinking and creativity, while managing information and critical thinking becomes more prominent in the secondary phases. There is a recommendation to give greater emphasis to creative thinking and innovation in the proposed Senior Cycle.
- The importance of interacting well with others and communicating is consistent across all phases, from play in the early years to more task-focussed group work with agreed outcomes in the senior cycle.
- Managing self, creating a positive self-image as a learner, and reflecting on learning is consistent but with more mixed meanings, with well-being being the focus in the early years and primary phases, and improving learning and goal setting being more obvious later. However, wellbeing and staying safe remain important as learners transition into secondary school and it is proposed to give greater prominence this strand for the Senior Cycle as well.
- Identity, belonging and participating in society appears in various forms, with reference to rights and responsibilities being prominent in the early years and in primary phase. It is introduced explicitly as a key competency in the proposed new Senior Cycle framework. The Junior Cycle includes short units on Civic, Society and Political Education, so it is not explicitly mentioned in Junior Cycle Key Skills, and in the Senior Cycle, there is a new Leaving Certificate subject called Politics and Society. As observed when comparing frameworks in other jurisdictions, there is a dilemma of how to respond to this aspect of **21st century learning** in terms of curriculum design, as a key competency applied across the curriculum, or as a separate unit of study.

The **Literacies** – communication and language, numeracy/mathematical thinking, digital literacy, as cross-curricular tools for learning, are evident, especially in the primary phase where they count for three of the seven key competencies in the primary framework. In the secondary phase, with the exception of communication, those literacies begin to be assumed as foundational. Options are proposed with regard to how literacies could be integrated into key competencies for senior cycle, as supporting tools to help learning across the other competencies or as a key competency in their own right. Either way, it is probably advisable to give digital literacy particular prominence.

To conclude, the continuities are clear but the language is different. That might cause some confusion, with teachers not fully recognising that the same type of learning is being referenced using slightly different language, and/or that there is different emphasis at different stages. Also, given the critique in Section 5 of Key Skills for Senior Cycle, it is not obvious that there is a common understanding and

commitment to the more general architecture of key competencies, in terms of the relationship between knowledge, skills, values/dispositions, particularly how the values/dispositions characteristics of the learning can be fostered. To achieve and communicate more coherence about these frameworks, NCCA might need to create a more general statement, describing their position across the phases.

So far the discussion has been about the **content of the learning** covered by the four frameworks. But the more exacting question is about the **progression in learning**. What are the expectations with regard to the level of learning at each phase, given the content of the key competencies are roughly similar across the phases? The general expectation is the key competency learning develops as students move through their school years and encounter new and more challenging learning (however defined), so that they can acquire and practice their competencies with increasing sophistication and maturity.

But how can the expectations about the key competency get ‘pitched’ at the appropriate level and not seem too demanding or too elementary for students at a particular stage? It should be remembered that the key competencies will be developed and practiced in the context of subject/module specifications, classroom lessons and tasks that would be typical for that phase of schooling. The integrated approach of knowledge, skills, and values/dispositions will help to anchor the learning to some extent. Some frameworks recommend mapping the key competencies directly into the learning outcomes for different subjects but, as previously pointed out, that runs some risks of becoming overly embedded in the expectations about subject knowledge and progress. In order to be more explicit about the progression profile of the competency itself, many other jurisdictions illustrate their broad expectations through progress maps, learning continua or profiles for grades/stages, mostly illustrating skills, values, dispositions components of the competency (see links below). Some cautionary points need to be made about how progress is conceptualised for these types of broader learning. There is a tendency to envisage progress as linear, with the simplest expectations for those in early years, and the most complex for those in senior cycle. And there will be some reality to that but also some distortion, as anybody who has observed early years settings can witness, where children can readily co-operate and work together (at least sometimes) or work independently on a task that they find absorbing. So it is likely that progression in key competency learning is like spiral learning, where a level of mastery is reached in the context of a particular level of challenge. When that challenge is increased, then what previously seemed mastered can be inadequate, and new learning must be acquired and practiced, and so the spiral continues. This shift in challenge is most likely at the points of transition in a student’s educational journey, where there are deliberate shifts in expectations about the cognitive demands of the curriculum, the social and emotional expectations

of school learning, and the school environment itself. So setting broad expectations about key competency development is useful but needs careful interpretation. (For a more extensive discussion of this, see McGuinness, Swartz & Sproule, 2016, in the context of advice to the International Baccalaureate on a same question, [pyp-mcguinness-full-report-en.pdf \(ibo.org\)](#) and also a more specific approach in the context of the Northern Ireland Curriculum's Thinking Skills and Personal Capabilities Framework, 2007, [\(PDF\) Thinking Skills and Personal Capabilities Guidance Booklet for Key Stage 3 \(ccea.org.uk\)](#))

7 Conclusions and final comments

7.1 The conclusions in this report build on a previous similar piece of commissioned work which the author completed for NCCA on 21st century competencies in a redeveloped primary curriculum (McGuinness, 2018). The general conclusions about key competences and their classifications, that were **not** specific to the primary phase, provide a springboard for the analysis in this report.

7.2 Key competency development can be seen as part of a more general thrust in educational systems across the world to pursue broader learning goals beyond traditional school subjects. The aim is to deepen students' learning and prepare them both for the societal challenges they currently face, as well as for their future as adults, as citizens, and for the world of work. These challenges are frequently called 21st challenges, as if they are 'in the future', but they are already upon us. They are often characterised as 'wicked' problems, not just because they are difficult to solve but that they require a shift towards embracing novel and creative approaches to complex problem solving and personal responses like resilience, tolerance of ambiguity and perseverance in the face of frustration.

7.3 While there is still variety in the terminology used to describe these broader learning goals – key skills, general capabilities, capacities, literacies – the terminology of key competencies(es) has gained prominence especially in Europe, and at the international level, primarily due to its use by the European Commission Key Competences for Lifelong Learning Framework, the theoretical dominance of the OECD's DeSeCo (Definition and Selection of Competencies) in the early 2000s, and the more recent OECD project on the Learning Compass. Nevertheless, the terminology of skills still prevails, especially at the level of specific jurisdictions (e.g., broad skills, thinking skills and personal capabilities, transferable skills, integral skills, see Table 6, Section 4).

7.4 However, the benefits of a key competency approach is that it clearly articulates the building blocks for learning and practicing a key competency - knowledge of the topic/context in which it occurs, relevant skills, as well as values/dispositions that motivate the learner to exercise the competency at that moment in time. This explicitness and clarity has considerable merit in the face of previous critiques and concerns about so-called skills-based curriculum approaches. Recent OECD work on brief 'concept notes', providing research-based explanations of the meaning of these different terms, has made a valuable contribution to shared understanding.

7.5 In addition, key competency approaches are entirely consistent with contemporary studies of school learning which demonstrate that there is more to effective learning than acquiring a well-organised knowledge base. Effective learners also need more general strategies and thinking plans to help them with new learning; they must be able to motivate and self-regulate their learning in order to respond flexibly to new problems and have positive beliefs and attitudes about themselves as

learners. This more agentic view of learning positions key competencies as crucial to help the transfer of learning, provided they are taught with transfer in mind, hence the importance of the overarching intention of key competency frameworks.

7.6 The recent OECD project on the Learning Compass has given a new impetus to theorising about the learning benefits of key competencies, emphasising the opportunities for student agency beyond the usual meaning of independent or self-directed learning, as well as the idea of co-agency, which highlights the social context in which students learn and work. Thus, there is a shift in the meaning of student agency beyond personal agency to social/collective agency, capturing the meaning of students acting as citizens in the local, national and global contexts.

7.7 Comparisons of international frameworks and jurisdictions show there is a high degree of consistency about what broader learning goals are included; (1) personal learning, such as ways of thinking, ways of interacting, ways of managing oneself; (2) tools for learning, such as reading, numeracy and digital/multimedia learning; and (3) identifying new knowledge areas, mostly cross-disciplinary or transdisciplinary, related to 21st century challenges. Many frameworks include all three, though not all. There is more variation among the specific jurisdiction frameworks especially with regard to the newer knowledge areas related to 21st century challenges, as countries prioritise topics related to local circumstances.

7.8 The NCCA's Senior Cycle Key Skills framework was reviewed to check if it continues to be fit for purpose or if it needs to be refreshed in the light of newer thinking about the nature and opportunities afforded by key competency approaches, and the conclusions from the framework comparisons. From our review, no other key competency frameworks identified competencies specific to the upper secondary phase. NCCA stands out as different in that regard, creating frameworks tailored to distinct phases of education from early years, through primary, to junior cycle and then senior cycle. To seek guidance on refreshing the Senior Cycle Key Skills, the purpose, vision and guiding principles for the Senior Cycle Review were consulted to guide recommendations that would be consistent with the overall ambitious of a reformed Senior Cycle.

7.9 It is recommended that the Senior Cycle would benefit from being re-designed to include explicitly the architecture of key competencies – knowledge, skills, and values/dispositions – integrated in ways to benefit student learning. With regard to the classification of competencies, as well as the current focus on the cognitive domain (information processing, critical and creative thinking), interpersonal (working together), and intrapersonal (being personally effective), there is a need to include a more outer-directed focus on developing key competencies, not just for personal achievement and future employment but also as a citizen participating in society. That may go some way to preparing students

for the challenges normally included in the 21st century learning agenda. It also resonates with the widening scope of student agency to include collective agenda, as outlined in the OECD's Learning Compass, and with the guiding principles of the Senior Cycle Review that the reformed Senior Cycle should *"serve collective as well as individual purposes in schools and educational settings and in the wider society"*. It is also recommended that creative thinking should be given more prominence and its scope widened perhaps to include innovation and entrepreneurship and that the scope of personal effectiveness be broadened to include an explicit focus on wellbeing.

7.10 Comparing the NCCA's phase-related competency/skills frameworks, it is concluded that there is good alignment and continuity with regard to the **content** of the classifications across phases, from early years, though primary school, to junior cycle and the proposed senior cycle, especially if it is viewed through the main headings of cognitive domain, interpersonal domain, intrapersonal domain, 21st century /Big Picture challenges, and literacies, as in Table 9. While the substantive continuities are clear, the **language** is different and this may cause some confusion, if teachers do not fully recognise that the same type of learning is being referenced using slightly different language, and/or that there is a different emphasis at phases. To achieve and communicate more coherence about these frameworks, NCCA might need to create a more general statement, describing how the learning is connected across the phases.

With regard to challenges

7.11 The first challenge is the risk that the key competencies become **too embedded** into subject teaching. While the NCCA's position is – rightly – to adopt an integrated approach and embed key competencies into subject/module specifications, there is a risk that they may become marginalised through the imperatives of subject teaching and become 'invisible' to students. Rather, key competency learning needs to face in two directions at once, towards deeper understanding and application in the context of subject teaching, but also in the direction of skills/values/dispositions so that they become more visible to the students. Students need to recognise that they are acquiring and gaining expertise in practicing these skills, so that they develop the habit of doing so, and recognise their importance beyond the immediate context in which they were first encountered. Only then can the transfer potential key competencies be realised for student learning. In the long run, this is a pedagogical issue but it **needs to be made clear at the level of curriculum design as well**.

7.12 A second challenge to do with the overarching intention of a key competency framework is the risk that it **becomes fragmented** and bits of it are embraced by some subject specialisms and not others. The transformative learning effects of key competencies are most likely to be realised when they work together to support students responding to complex learning challenges, as outlined in the

original DeSeCo definition of a key competency. There is also the question of equity and access if students choose different subjects/modules or some are available on some pathways but not on others. It may well be the case that some subject areas will find it easier to accommodate some of the key competencies more than others but it does not follow that some subjects should 'own' certain competencies and not others. A key competency framework encourages subject specialists to re-imagine the boundaries of their subject, and avail of opportunities that a competency framework affords.

7.13 The final challenge relates to whether some of these broader learning goals should be considered as **cross curricular learning** and framed as a key competency or should **become a new subjects or modules** in their own right. This tension is particularly evident when considering learning labelled as 21st century challenges or societal challenges more generally. For example, should 'participating in society' be framed as a key competency as proposed for the new Senior Cycle, or should it be included as Civics Education or Politics and Society? Should health and well-being education be characterised as a cross-curricular theme or as subject? These tensions were obvious from our review of international competency approaches, as well as within specific jurisdictions, and indeed were not fully resolved by the examples we reviewed.

7.14 Finally, NCCA and schools are in a good position to embrace these challenges as they now have considerable experience creating and implementing curricula from the perspective of these broader learning goals, however they are named!

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